

MARKS & CLERK
Intellectual Property

European Patent Attorneys
Chartered Patent Examiners
European Trade Mark Attorneys
Registered Trade Mark Attorneys

Oxford Office
4020 Nash Tower
Oxford Business Park South
Oxford OX4 2RU

Established 1887

Tel: +44 (0)1865 397900
Fax: +44 (0)1865 397919
E-mail: oxford@marks-clerk.com
http://www.marks-clerk.com

Rebecca Tanis
WesternGeco Intellectual Property Dept
PO Box 2469
Houston
TX 77252-2469
USA

your ref 14.0209-PCT
our ref AMS.P52427WO
date 27 August 2004

RECEIVED

AUG 30 2004

MTS/08/30/04
IPW

Dear Rebecca

PCT Application PCT/EP 03/50871
WesternGeco Seismic Holdings Limited et al
"Implementing a Network Infrastructure in a Seismic Acquisition System"

The European Patent Office has issued the first written opinion on the above application, and a copy is enclosed. The due date for responding to the written opinion is **18 November 2004**.

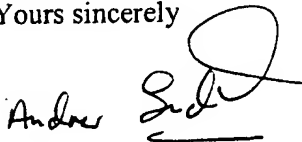
I am pleased to report that the Examiner has indicated that independent claim 21 is allowable over the prior art. This is set out in section 3 of the written opinion.

The Examiner has further indicated, on section 4.2 of the written opinion, that dependent claims 3, 5, 13-20 and 22-25 are allowable over the cited prior art.

The Examiner is, however, objecting that independent claim 1 and dependent claims 2, 4 and 6-12 are not novel over either US-B-6 459 654 ("D1") or US-B-6 337 636 ("D2"). These objections are raised in sections 2 and 4.1 of the written opinion.

I intend to review the Examiner's objections and send you my comments. Please let me know if you do not want me to do this.

Yours sincerely



Dr Andrew Suckling

BEST AVAILABLE COPY

Partners

E W B Lyndon-Stanford MA CPA EPA
C J R Gibson CPA EPA
D Carpenter LLB CPA EPA
K Whalley BSc MITMA CPA EPA
P J Allman BSc MITMA CPA EPA
B Spoor BSc CPA EPA
M R Higgins BSc MSc Eng MEE MSAL MANSI CPA EPA
D G Tubby BSc CPA EPA
E J Godwin MA CPA EPA
A J Ablewhite BSc(Chem) ARCS CPA EPA
G K Ruffles BA BSc MSc Eng Chem FSC CC Chem CPA EPA
J S Robinson MA CPA EPA
J A Slater FIMA CPA EPA

A H W Luckhurst MSc MITMA CPA EPA
A V Hallam Eng Chem MEE CPA FIMA EPA
S P Horsford FIMA
R P Harding MA CPA EPA
S J Hackett BSc(Phys) ARCS CPA EPA
C T Graham LLB MITMA
P B Atkinson BSc Chem MSc CPA EPA
H D Lord MA CPA EPA
P P Mauty MA Chem MSc MITMA CPA EPA
B J Morgan MITMA
K L Hodgkinson MSc(Eng) BACS MITMA CPA EPA
E D M Rowley FIMA
S G Mosey BSc CPA EPA
S J Mounteney BSc Chem MSc CPA EPA
T S Andrews MA PhD CPA EPA

J P Asquith MA FIMA NZPA CPA EPA
H C Fisher MITMA
D A Every BSc MITMA CPA EPA
M P Holmes BSc CPA EPA
A V Clarke MA MITMA
J Key LLB MITMA
M J Lamb MA MITMA CPA EPA
R L Tew BSc MSc MITMA
P J Withers BA MITMA
I H Coates BSc(Chem) ARCS PhD DIC
MITMA CPA EPA
A M Suckling MA PhD MITMA RPA EPA
R A Bailey BSc CPA EPA
D C Stagg BSc MITMA DIC CPA FIMA EPA
J D Collins BSc PhD Chem MSc
MITMA CPA EPA

S Loeffler BSc(Chem) MITMA
P A Melling BA MITMA
R Ling BSc PhD CPA EPA
J L Midgley MA ARCS CPA EPA
R J Griffiths MA PhD CPA EPA
P C Bartford BSc PhD CPA EPA
M P Shaw LLB MITMA
D I Ward BSc MSc PhD CPA EPA
P J Martin BA PhD CPA EPA
J A Moffat BSc CPA MITMA
S J Church BSc CPA EPA
J Barrett-Major BSc CPA EPA

Consultant
M H Blah LLB

Associates

A C Fairbairn MA CPA EPA
K P Halligan MITMA
V I Gaddy MA MITMA
C L Mounteney BA MITMA
D Talbot-Ponsbury MA PhD CPA EPA
G D Smyth MA Chem MSc CC Chem CPA EPA
P Morari BSc MSc RPA
K A Oliver LLB MITMA
G D Chisholm BSc(Eng) BA(Phys) CPA EPA NZPA
G A Duncan MSc(Eng) MSc EPA
R J G O'Leary MA MSc RPA EPA
M P Hagemann-Smith BA Eng PhD Phys CPA

M J Ajoie BSc FSA
P Mollon MA Solicitor
R McCausland BSc(Eng) FIMA NZPA
R Ballesster Associate

040827009vp

PATENT COOPERATION TREATY

OL 18.11.04

→AMS

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

RECEIVED

23 AUG 2004

MARKS AND CLERK

PCT

To:

SUCKLING, Andrew
MARKS & CLERK
4220 Nash Court
Oxford Business Park South
Oxford OX4 2RU
GRANDE BRETAGNE

WRITTEN OPINION
(PCT Rule 66)Date of mailing
(day/month/year)

18.08.2004

Applicant's or agent's file reference
AMS.P52427WO

REPLY DUE

within 3 month(s)
from the above date of mailingInternational application No.
PCT/EP 03/50871International filing date (day/month/year)
21.11.2003Priority date (day/month/year)
22.11.2002International Patent Classification (IPC) or both national classification and IPC
G01V1/22

Applicant

WESTERNGECO SEISMIC HOLDINGS LIMITED

1. This written opinion is the **first** drawn up by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application
3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 22.03.2005

Name and mailing address of the international
preliminary examining authority:

European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized Officer

Schneiderbauer, K

Formalities officer (incl. extension of time limits)

Püschel, S

Telephone No. +49 89 2399-5812



WRITTEN OPINION

International application No. PCT/EP 03/50871

I. Basis of the opinion

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

Description, Pages

1-20 as originally filed

Claims, Numbers

1-25 as originally filed

Drawings, Sheets

1/8-8/8 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

6. Additional observations, if necessary:

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1 (no), 21 (yes)
Inventive step (IS)	Claims	1 (no), 21 (yes)
Industrial applicability (IA)	Claims	all yes

2. Citations and explanations**see separate sheet**

The examination is being carried out on the **following application documents**:

Text for the Contracting States:

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL PL PT RO SE SI
SK TR

Description, pages:

1-20 as originally filed

Claims, No.:

1-25 as originally filed

Drawings, sheets:

1/8-8/8 as originally filed

1.) Reference is made to the following documents:

D1: US-B-6459654 (Bary) 01-10-2002

D2: US-B-6337636 (Zheng) 08-01-2002

2.) The present application does not meet the requirements of **Article 33(1),(2) PCT**, because the subject-matter of claim 1 is not new.

Each of the documents D1 and D2 disclose a seismic acquisition system comprising:

- a plurality of seismic data sources capable of generating data (D1: receivers "R" in fig.1; col.5, li.10-12; D2: fig.1, ref.100)
- a data collection system (D1: fig.1, "CCU"; D2: central recording unit 160; col.4, li.43-45) utilizing an open network protocol (D1: col.5, li.51-56; D2: claim 8)
- a line network connecting the data sources to the data collection system and utilizing an open network protocol (D1: col.5, li.48-65; D2: claim 8)
- including a plurality of data source nodes (D1: fig.1, "BA_{pk}", col.5, li.12-18; D2: fig.1, ref. "RSU"; col.4, li.28-36) at which a portion of the plurality of seismic data sources (D1: fig.1, "R"; D2: fig.1 ref.100) are respectively attached to the line network (D1: col.5, li.26-35; D2: col.4, li.35,36; fig.2) and
- a router (D1: fig.1, "RSS_i"; D2: fig.1, "SLCU", ref.140,160; col.4, li.36-43) for routing data generated by the seismic data sources (D1: fig.1,"R"; D2: fig.1, ref."100") to the

data collection system (D1: fig.1, "CCU"; D2: ref.160) through the data source nodes (D1: fig.1, "BA_{pk}"; D2: "SLCU") in accordance with the open network protocol (D1: col.3, li.53-59; col.5, li.26-37; col.5, li.50; li.51-56; D2: claim 8).

3.) Currently there are no objections concerning the subject matter of independent claim 21.

4.) The dependent claims:

4.1) The subject-matters of claims 2 and 4 and 6-12 are not novel (**Art. 33(1),(2) PCT**); s. also cited passages in the ISR:

4.2) The subject-matters of dependent claims 3, 5 and 13-20 and 22-25 seem to be new and inventive. There are no objections at the current stage.